

Date: Fri, 10 Jun 94 18:30:38 PDT
From: Info-Hams Mailing List and Newsgroup <info-hams@ucsd.edu>
Errors-To: Info-Hams-Errors@UCSD.Edu
Reply-To: Info-Hams@UCSD.Edu
Precedence: Bulk
Subject: Info-Hams Digest V94 #649
To: Info-Hams

Info-Hams Digest Fri, 10 Jun 94 Volume 94 : Issue 649

Today's Topics:

440 in So. Cal.
help with th-78a (2 msgs)
hlp with rpt ant
Ignition Noise Help Wanted
IOTA info
Kenwood TS-50S Function Keys
Lat/Lon Bearings
Simplex spacing
Turbolog
VHF Maritime Outrage!!
VK2SG RTTY DX Notes, 10 June

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 09 Jun 1994 09:59:10 -0400
From: ftpbox!mothost!lmpsbbs!NewsWatcher!user@uunet.uu.net
Subject: 440 in So. Cal.
To: info-hams@ucsd.edu

In article <rogjdCr2voM.4IA@netcom.com>, rogjd@netcom.com (Roger
Buffington) wrote:

> Walter Reid Fletcher (fletcher@moho.uwyo.EDU) wrote:
>
> : After all this I find it interesting that no one has demanded that ALL if not
> : a much greater number of 2-meter repeaters be made open due to the scarcity

> : of available spectrum in that band in So. California. There's much less
> : bandwidth in the 2-meter band than in the 70 cm band, after all. So why is
> : everyone steamed about 440 MHz and not 146 MHz? There's gotta be more 2m
> : rigs in So. Cal. than 70 cm rigs.

Walt, where did you or those you allude to get the notion that someone HAS to talk to you on the amateur bands? There's no requirement that someone MUST answer your CQ on the low bands either. Amateur radio operation is a privilege granted to those who meet technical requirements, but conversation is not a granted right that accompanies a license. I am certainly allowed to ignore someone calling on 2M just as I can ignore the dog barking next door.

Open repeaters weren't the original issue in the thread (which is still running in r.r.a.policy, by the way). The issue was the refusal of a coordinating committee to allow more than one repeater per channel, despite the FCC requirement for channel sharing and non-exclusive use of any given frequency.

IMHO the problem is MORE severe in the 2M band than at 440, although the ridiculously high number of linked machines which simultaneously broadcast the same information on 6, 2, 220, 440, and 1296 compound the problem in all bands.

>
> Basically the reason I haven't complained in this manner is that most of
> the repeaters on 2 meters in Southern California *are* open. 2 meters in
> Southern California is a delight, with many high, medium and low level
> *open* repeaters to choose from.
>
> 440, on the other hand, is a wasteland of underutilized spectrum and
> private repeaters where the average ham is not welcome.
>
> I'll pass on your other comments.

>
> 73

> --

> rogjd@netcom.com
> Glendale, CA
> AB6WR

Roger, from your callsign I can see that you hold a high enough class of license to know that you can either personally fill some of that underutilized spectrum with your own repeater, or join one of the smaller special interest groups that utilize 440 for their amateur radio activities. Open repeaters weren't the issue, access to spectrum was and continues to be the problem.

--

Karl Beckman, P.E. < Genius may have its limitations, but >
Motorola LMPs- Analog Data < stupidity is not thus handicapped. >
< - Elbert Hubbard >

The statements and opinions expressed here are not those of Motorola Inc.
Amateur radio WA8NVW @ K8MR.NEOH.USA.NA NavyMARS VBH @ NOGBN.NOASI

Date: Fri, 10 Jun 94 08:02:06 -0500
From: news.delphi.com!usenet@uunet.uu.net
Subject: help with th-78a
To: info-hams@ucsd.edu

robert green <n1ptt@netcom.com> writes:

>i wipped the memory on my th-78a, cant find manual...
>how do i set frequency change on tow meters...
>(i.e. want 145.230, get 145.2250, or 145.2375).....
>also. how do i set minutes on its clock.....

Bob,
IF you can, find the manual, it is essential to programming the th78.
If you have really lost it as opposed to misplaces, i may be able to
send you a photocopy.

good luck

pete, n1qdd

Date: Fri, 10 Jun 1994 04:39:51 GMT
From: news.claremont.edu!paris.ics.uci.edu!csulb.edu!csus.edu!netcom.com!
n1ptt@uunet.uu.net
Subject: help with th-78a
To: info-hams@ucsd.edu

i wipped the memory on my th-78a, cant find manual...
how do i set frequency change on tow meters...
(i.e. want 145.230, get 145.2250, or 145.2375).....
also. how do i set minutes on its clock.....

73's and thanks....bob green

--

n1ptt@netcom.com
Bob Green

7 Sylvester Drive
Framingham, Mass 01701-7817
(508) 872-5231

Date: Thu, 09 Jun 1994 11:33:32 -0400
From: ftpbox!mothost!lmpsbbs!NewsWatcher!user@uunet.uu.net
Subject: hlp with rpt ant
To: info-hams@ucsd.edu

In article <9406081555.AA0286@smtp.UB.com>, David_Bourque@UB.COM (David Bourque) wrote:

> The subject says it all. One of the 2M repeaters I help maintain is in need
> of an antenna replacement. Everyone we (technical committee) talk with says
> to get a Station Master type of antenna for our installation. We are
> replacing a Diamond that didn't survive the New England winter. The Diamond
> is less than 2 years old and its demise is a story for a different day. I'm
> seeking opinions and hopefully some answers.

The thickness and durability of the fiberglass radome is a major consideration, and since these are hand-built it controls the antenna price much more than the price of the copper inside does. After a winter on a New England mountaintop, you begin to see why the Diamond sells for less. Also remember that Diamond and most other imported antennas have gain ratings in dBi, which is 2.1 db more than the dBd rating!

> We were given a Phelps-Dodge antenna. Freq tag removed. I know for a fact
> that it was in service at 152Mhz. The hope was to retune this antenna for use
> at 146Mhz. When asking around on the proper way to do this I was advised that
> this antenna cannot be modified because the antenna is only 20 feet long.
> These same people tell us we need one that is 22 feet long. Fact or fiction?
> Any help?

First things first. Celwave purchased the old antenna manufacturing portion from Phelps-Dodge Copper Co. several years ago. Celwave itself is a division of Radio Frequency Systems. So when people talk about Phelps-Dodge antennas today, they really are referring to Celwave RFS. Celwave owns the trademarks "Stationmaster" and "Super Stationmaster" among many others.

Next, call Celwave at 1-800-321-4700 to obtain their current "Product Selection Guide #191" catalog. The local distributor also should be able to give you one to inspire you to do business with him! Most of the information you need is in there, but I'll summarize it here for all to read.

Last, the people who advised you are correct, but not for the reason you

think. Read on for details, and you'll see why a brand-new PD220 is the best way to go, followed by a used PD220 in the 151 to 159 ranges.

> I've been offered yet another antenna, I'll have to pay for this one, that has
> already been in service in the amateur band. The owner thinks the model
> number is PD-220. Cell Wave I believe.

The PD220 is the Super Stationmaster, a rugged implementation of their patented colinear dipole design. It is rated at 4.8 dBd in the 2M band, overall length 22 feet; the support pipe at the bottom is 2-3/4" OD and about 30" long in the ham band model. The ranges are suffixed as follows:

PD220-1	136 to 144	PD220-2	144 to 148	PD220-3	150.5 to 158.5
PD220-4	151.5 to 159.5	PD220-5	155 to 163	PD220-6	162 to 170
PD220-7	166 to 174	PD220-8	216 to 225		

> We've contacted a local distributor regarding the purchase of a new antenna.
> Cell Wave PD-200. Big bucks. Distributor says this antenna is 21 feet long.
> I'm also not sure I've got the model prefix correct.

The PD200 is the regular Stationmaster, a lighter duty version rated at 5.8 dBd. The element housing length is 19 feet, the antenna is only 1.13 sq ft wind area, and the support pipe is smaller (2-3/8" OD) and shorter (22"). It was NOT designed for wide bandwidth, only 1.5 MHz at 1.5 VSWR, so you specify the center frequency when ordering and you can't reuse them in a different part of the commercial spectrum or amateur band. They all show the same number PD200 on the tag.

> Now, what is the difference between the 200 and 220? Anyone know?
>
> So now I have reference to three different antenna lengths, 20, 21 and 22
> feet. How are these lengths measured and/or specified? Radome length? Bottom
> of base to top of radome?

Ignore the lengths and go strictly by the model numbers when you can. It's what is inside the radome that matters, not the dimensions of the fiberglass housing. The most important thing is the model tag, because it tells you two important things: What frequency range the antenna was built on, and what frequency it was tested on.

In your case the statement that the antenna is 20 feet long means that it is PROBABLY the PD200, which is incapable of operating efficiently on 2M when built for 152.x MHz. You can verify my educated guess by checking the OD of the radome at the end where it joins the metal support pipe.

> If I find a used one, what key factors should I be looking for? What can and
> cannot be modified? I'm looking for personal experience and opinions but

> please state where your comments are from in any replys. If one can be
> modified from the commercial service then what is the proper way to do this?

Don't try to disassemble it and lengthen the elements; you'll damage it beyond repair and you never get the radome watertight again! There is no external tuning adjustment; these are custom-built and custom-tuned professional grade antennas. Instead, take advantage of one of the unique advantages of an end-fed broadband colinear: the ability to get a slight (3 to 4 degree) downtilt of the main lobe if you drive the antenna at about 5% below its cut frequency. Thus if you put 146 MHz into a 152 MHz PD220 antenna, the VSWR will only be about 1.9 and the main lobe comes down from horizontal by about 3-4 degrees so you aren't shooting so many precious ERP-watts (new term, Gary?) into the solar system. You can't do this with the PD200 because its "Q" is too high.

> What is the right way to take one of these babies apart? The one that was
> given to me has a UHF connector inside the base and two allen screws on either
> side of it about 2 inches further inside the base. It also has three screws
> on the exterior of the metal base just below the radome. Before I end up with
> a pile of junk, what needs to come out to get at the interior? Once I get to
> the interior what needs to be done to retune the elements. I know the need to
> get longer to lower the frequency, but how? Will it be obvious once I get it
> apart? If not convertible for use at 146Mhz then how about for use at 446 Mhz
> were the elements need to get shorter?

>

> Gary I'm expecting some answers from you.

Gary, I owed you one so I thought I would pay off early before the interest rates went up again! Feel free also to add or modify from your experience.

> Any help will be greatly appreciated. Many thanks.

> David Bourque

> WB1FLD

> dbourque@ub.com

--

Karl Beckman, P.E.	<	Genius may have its limitations, but	>
Motorola LMPs- Analog Data	<	stupidity is not thus handicapped.	>
	<	- Elbert Hubbard	>

The statements and opinions expressed here are not those of Motorola Inc.
Amateur radio WA8NVW @ K8MR.NEOH.USA.NA NavyMARS VBH @ NOGBN.NOASI

Date: Thu, 9 Jun 94 18:24:46 -0500
From: news.delphi.com!usenet@uunet.uu.net
Subject: Ignition Noise Help Wanted
To: info-hams@ucsd.edu

The first rule in rfi is to attack the SOURCE of the interference, rather than try to prevent it from reaching it's destination.

I had an older suburban with the same problem. WhT i HAD To do was to put both resistor ignition wire AND resistor plugs. Suburbans have very High Voltage (HT) ignition systems. I also had to heavily filter the 12 volt supply line. (Some power was lost with the resistor wire/plugs)

Date: Thu, 9 Jun 1994 19:40:16 GMT
From: pa.dec.com!jac.zko.dec.com!crl.dec.com!utne.zk3.dec.com!mets86.two.dec.com!peavax.mlo.dec.com!usenet@decwrl.dec.com
Subject: IOTA info
To: info-hams@ucsd.edu

Send \$8 to W4BAA - he'll send you the IOTA program booklet, which includes rules for the IOTA awards, in addition to the current list of Islands and IOTA numbers.

--
Jim Reisert AD1C Internet: reisert@mlo.dec.com
Digital Equipment Corp. UUCP: ...decwrl!mlo.dec.com!reisert
146 Main Street - ML05-2/M16 Voice: 508-493-5747
Maynard, MA 01754 FAX: 508-493-0700

Date: Thu, 09 Jun 1994 18:28:55 -0400
From: niven.ksc.nasa.gov!algot.ksc.nasa.gov!k4dii.ksc.nasa.gov!user@ames.arpa
Subject: Kenwood TS-50S Function Keys
To: info-hams@ucsd.edu

In article <4F9kNc1w165w@stat.com>, david@stat.com (David Dodell) wrote:
> I have function 4 on my microphone for the TS50S to display that
> extended frequency ... can anyone tell me how this is controlled thorough
> the mic, is a certain pin sent to ground etc?

david-

The function buttons are "multiplexed", sharing the microphone's up, down and push-to-talk button lines. I don't have the exact data at hand.

I sometimes have trouble with functions being activated while using the up/down buttons. When function 1 gets activated, I can't procede with the up/down function until I manually press button 1. Does anyone else have this problem?

73, Fred, K4DII

Date: Fri, 10 Jun 1994 06:46:04 GMT
From: ihnp4.ucsd.edu!sdd.hp.com!spool.mu.edu!torn!nott!cunews!freenet.carleton.ca!
FreeNet.Carleton.CA!as041@network.ucsd.edu
Subject: Lat/Lon Bearings
To: info-hams@ucsd.edu

In a previous article, CS-ERH@nich-nsunet.NIch.EDU (Evert Halbach) says:

>Does anyone know of any software that would give me distances between
>two points when Lat and Lon of both locations are put in???

>
I use a small Macintosh application called MacShortwave which will not
only do what you ask but will also show MUF and LUF on all ham bands by
time and path.

You can program 50 location buttons by name and lat/long. Then, when you
select two city pairs (yours and another), it will tell you the distance
in miles and the best frequency for the time of day. You also need to put
in the current sunspot number.

But, this is for the Mac . . . there must be something similar for DOS if
that is your environment.

73, Rob

--
Robin Ludlow, VE3YE
Orleans, Ontario, Canada
as041@freenet.carleton.ca

Date: Thu, 9 Jun 1994 20:28:50 GMT
From: newsgate.melpar.esys.com!melpar!phb@uunet.uu.net
Subject: Simplex spacing
To: info-hams@ucsd.edu

>: Does anyone know what the offical spacing on 2m for Simplex operation?
>: Several friend and I have been discussing this and can not determine if it is
>: 10 khz or 15 khz or neither for that matter! Any input would be appreciated.

>Vincent, it's going to depend on your areas local conventions. Parts of
>the country uses are 15 KHz channel spacing, other parts are 20 KHz though
>even that doesn't necessarily dictate which is used in your immediate

>local area.

You can "use" any spacing you want for casual transmissions, as there is no "official" FCC rule on this; for example, a lot of locals in my area use 146.535 for simplex mobile. However, you may get flack from some operators for not adhering to the ARRL Band Plan (which specifies precise simplex frequencies between 146-147 and 147-148 MHz).

If you use FM during a VHF contest, use ONLY the ARRL-specified simplex frequencies as called out in the Band Plan (they're listed in the ARRL Repeater Directory) EXCEPT (a) you CANNOT use 146.52, and (b) you CAN use other simplex frequencies as locally APPROVED by the frequency coordinator(s) in your area. Note that I said approved, NOT "agreed upon by an ad hoc group of local hams."

(|_|) * Paul H. Bock, Jr. K4MSG * Internet: pbock@melpar.esys.com
| |) * Senior Systems Engineer * Telephone: (703) 560-5000 x2062

"You can have my bug when you can pry my cold, dead fingers from around it....." - anonymous radiotelegraph operator

Date: 9 Jun 1994 20:50:21 GMT
From: EU.net!sunic!nic.tip.net!kuai.se!lassli@uunet.uu.net
Subject: Turbolog
To: info-hams@ucsd.edu

Hi ! Is there anyone who have tested the Tubolog ver 2.19 Logging software and have some comments or bugreports?!

73 de SM3KOR Lasse

Date: 10 Jun 94 20:41:41 GMT
From: sdd.hp.com!hpscit.sc.hp.com!cupnews0.cup.hp.com!jholly@hplabs.hpl.hp.com
Subject: VHF Maritime Outrage!!
To: info-hams@ucsd.edu

Jim Revkin (revco@YALE.EDU) wrote:
: I'd be interested in hearing the group's feelings about new FCC
: licensing fees for VHF maritime transceivers. In my view this is
: an outrage. The availability of VHF Maritime transceivers should
: be facilitated, in my view, NOT impeded, for safety reasons.

This does not impede the availability of VHF Maritime transceivers. They are available as they always have been. Any one can buy the transceivers,

practically any where.

: It
: is quite possible, if not probable, that a mariner with a VHF trans-
: ceiver might be within closer range of a sailor in distress, than
: the US Coast Guard, or other parties. I can recall being stranded
: in a 22 ft sailboat, in a thunderstorm, with no wind, and only
: a VHF HT on board.

Strange thunderstorm. Generally the problem is the abundance of wind.
But accepting in your part of the country you have thunderstorms without
wind, and you only had a VHF HT, how did this solve the problem with no
wind?

: To charge a licensure fee (>\$100) which might
: represent anywhere from 30 to 75% of the value of a transciever is
: absurd.

Clearly, then, the solution is to raise the price of the transciever.
Would you care to buy a transciever ... I have one for sale.

: My other concern, of course, is that we will see reinstituted,
: licensure fees for amateur licenses. fyi:

They did cost money at one time. Virtually every other country in the
world charges money for a license except the U.S. What it costs a
Japanese ham in terms of money and bureaucracy would make your hair
stand on end. If the U.S. license costs \$70 to \$140 for a 10 year period,
this is peanuts compared to what a station costs. You can easily spend
that much a year in postage and IRC's chasing a DXCC. Maybe its time
we accept what the costs of our hobby is and be happy to enjoy it.

Jim, WA6SDM

jholly@cup.hp.com

: >From the BOAT/U.S. Newswire, 6/10/94: FCC ADOPTS HIGHER MARINE RADIO LICENSE
: FEES
: Contact: David Pilvelait, boatus@aol.com
: WASHINGTON, DC - A spokesperson for the Federal Communications Commission
: (FCC) told BOAT/U.S. today that the Commission has voted to increase the cost
: of licensing a VHF marine radio from \$35 to \$105. The formal announcement of
: the increase will appear in the Federal Register next Monday or Tuesday and
: the increase will become effective 30 days from that day, which would be on
: or about July 13.

: The spokesperson also said the fees - \$35 for the license application and \$7
: per year, or \$70, for the 10-year term of the "ship's station" license -
: would be in effect for 1994 and that the FCC "would entertain comments for
: changes in the fee structure" for 1995 and future years in a Notice of

: Proposed Rulemaking for the '95 fees, to be issued in a couple of months.
: -0-
: BOAT/U.S. Newswire
:

: --
: James H. Revkin, M.D. KA1QJ
: revco@revco.med.yale.edu

Date: Fri, 10 Jun 94 08:02:44 GMT
From: dog.ee.lbl.gov!agate!library.ucla.edu!europa.eng.gtefsd.com!
news.msfc.nasa.gov!news.larc.nasa.gov!lerc.nasa.gov!kira.cc.uakron.edu!
malgudi.oar.net!infinet!n8emr!@ihnp4.ucsd.edu
Subject: VK2SG RTTY DX Notes, 10 June
To: info-hams@ucsd.edu

=====
| Automatic relayed from packet radio via |
| N8EMR's Ham BBS, 614-895-2553 |
=====

SB DX @ WW \$RTDX0610
VK2SG RTTY DX Notes, 10 June
VK2SG RTTY DX Notes for week ending 10 June 1994 (BID RTDX0610)

Just a reminder, ANARTS WW RTTY/Digital Contest, sponsored by
Australian National Amateur Radio Teleprinters Society, this week June
11-12 from 0000Z Saturday until 0000Z Monday, 48 hours. 5 bands, 10,
15, 20 40 and 80 meters. All digital modes permitted. Exchange RST,
Zone and UTC time.

Our information this week came from DJ3IW and the Central-Europe DX
Cluster Node DB0SPC, I5FLN and the IK5PWJ packet cluster, N2DBI, W2JGR
and the NJ0M node of the Twin-Cities DX Packet Cluster, VK2SG and
W5KSI. Thank you all for your assistance.

Bandpass

Friday 3
1701-14073 5R8KH Pactor
2044-14087 SV5/DL6RAI
2125-14087 4X6UO
2145-14084 EA2CNT

Saturday 4
1522-14073 A41KB Pactor

1620-14081 TY1PS
1654-14088 DU1BJD
2038-14086 4X6UO
2217-14087 LU5QAD

Sunday 5

0703-14090 ZA1AJ QSL OK2PSZ
0711-14083 SV5AZP
0734-14085 ZA1MH
1044-14085 4L1BR
1138-14084 SV1ADG
1139-14081 ZA1AJ
1304-14082 ZA1AJ
1550-14081 HI3AB
1701-14084 9N1AA
1714-14085 BV7WB
1721-21085 Z21HD
1723-14085 GU/DL9YAJ
1724-14087 4X6YO
1752-14087 4L1BR
1752-14085 DU1BJD
1753-14090 ZC4ZZ
1846-14083 BV7WB
1914-14085 SV5/DL6RAI
2013-14083 VP9MZ
2036- 7037 GU/DL9YAJ
2042-14086 4X6UT
2057-14088 ZA1AJ

Monday 6

1817-14089 VQ9JB
1817-14087 Z21HD
2112-14086 PJ2MI

Tuesday 7

1150-14086 EE0TT QSL EA1EVE
2248-14088 IS0LSD
2251-14085 FG5GI

Wednesday 8

1200-14088 C56/DK20C
1246-14082 ER1PE Moldavia QSL I8YGZ
1714-14086 VP5JM
1716-14086 4X6UO
1720-14085 UX0KA
2024-14087 5B4VX
2027-14085 GU/DL9YAJ
2042-14086 4X6UO

2047-14089 HC6CR
2115- 7035 GU/DL9YAJ
2123-14086 Z21HD
2123-14084 7X2DS
2124-14089 A41AD

Thursday 9

0006-14986 ER1PE
0225-14089 VE2MJ
1643-14087 A45XC
1646-14089 UA3BX
1709-14087 4L1BR
1744-14087 SV1ADG
1748-14088 HC6FQ
1807-14088 5B4VX
1807-14087 4L1BR
1813-14084 SV1ADG
1814-14085 EM5U
2106-14088 7X2DS

Notes of Interest.

GRENADA, J3. Doug, KF4KL, reports that he will be going to Grenada 16-23 June and will be operating all digital modes.

SAINT PAUL ISLAND, CY9. A group of operators will be active from Saint Paul from 10-19 June running two stations around the clock. QSL via K0SN.

MICRONESIA, V6. A group from OKDXA and some operators from the South Pacific will be on from now until 17 June. Four stations will be on the air, all bands including RTTY. QSL OKDXA, P.O. Box 88, Wellston, OK 74881.

For next week's bulletin, send your Bandpass and Notes of Interest to Jules, W2JGR @ W5KSI.#NOLA.LA.USA.NA

Remember, DX Don't Sleep.

GL DE Bob, WB2CJL @ W5KSI.#NOLA.LA.USA.NA
/EX
SP KT7H @ N7DUO.#WWA.WA.USA.NA

Date: Fri, 10 Jun 1994 01:56:36 GMT
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa

To: info-hams@ucsd.edu

References <CqyMzM.KnI@news.Hawaii.Edu>, <rogjdCqz6Lq.F0z@netcom.com>,
<1994Jun6.140208.21614@ke4zv.atl.ga.us>

Subject : Re: Reality check (was Re: Ham Radio few problem)

In article <1994Jun6.140208.21614@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary Coffman) writes:

>

>You catch on fast. Ask Jeff how the bathroom patrols are going.

Since you brought it up here's an update: The university, due to a flood of complaints from students, faculty, staff, and the student newspaper, have taken the drastic action of removing the doors from the stalls in all the restrooms. No privacy but at least the gays have to go elsewhere to do what ever it is they do to each other. No more sticky floors.

It's easy to tell that you haven't been on a college campus for a loooong time. Funny that you've been thinking about this all this time, though...

Jeff NH6IL

End of Info-Hams Digest V94 #649
